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# The relationship of well-being, academic self-efficacy, and academic major satisfaction among part-time job students: A cross-sectional study

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## Abstract

**Introduction:** Part-time jobs are common among college students due to financial needs and personal development goals. While it offers benefits, its impact on student well-being, academic performance, and major satisfaction remains unclear. This research delves into the intricate links between part-time job, well-being, academic self-efficacy, and satisfaction with major selection, aiming to improve student support through a deeper understanding of these factors.

**Methods:** This study analyzed 282 students with part-time employment after surveying and selecting them. For model analysis, PLS-SEM software was utilized, whereas SPSS software was applied for descriptive statistics and comparative analyses.

**Results:** Of the total participants, 67.4% of students were females, while 32.6% of students were males. There were 22.7% freshmen, 37.2% sophomores, 28.0% juniors, and 12.1% seniors. This study indicated that academic major satisfaction is influenced by both mental health and academic self-efficacy; academic self-efficacy is influenced by mental health. Furthermore, academic self-efficacy acts as a mediator between mental health and academic major satisfaction. Moreover, parental income may be a factor influencing students' academic self-efficacy.

**Discussion:** Our findings provide more evidence about the relationship between mental health, academic self-efficacy, and academic major satisfaction. To maximize students' academic self-efficacy and academic major satisfaction, schools must prioritize the mental wellness of their students.

**Take-home message:** Students with positive mental health tend to exhibit higher academic self-efficacy, increasing satisfaction with their chosen major. Additionally, the influence of parental income on academic self-efficacy underscores the need for considering socioeconomic factors in educational research. Schools should prioritize students' mental well-being to foster academic confidence and satisfaction, offering a pathway for enhanced success in higher education.

**Keywords:** academic major satisfaction; academic self-efficacy; mental health continuum; part-time job; well-being.

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## INTRODUCTION

What can students expect when they arrive at university? Reality differs from films depicting college life. More specifically, most students with little financial means must design a spending strategy to cover living expenses and college tuition. A part-time job has been one of the most common experiences for college students over the years. In the United Kingdom, the proportion of students working part-time during the semester had increased by year, from 48.7% [1] to 58.92% [2], even up to 67% in a study in 2012 [3]. Students working for a paycheck throughout the academic year in the United States exceed 50% [4]. The National Center for Education Statistics [5] reported that in the United States, part-time work was undertaken by 81% of part-time students and 43% of full-time students in 2017. Comparatively, in Asian countries such as China, around 64% of students were employed in part-time work [6].

With rising tuition expenses and a complicated financial aid system, most students and their families have had to devise a plan to cover college costs. As a result, there is a lot of evidence that students seek part-time jobs for a variety of reasons. They believed their financial resources were insufficient to cover the high cost of college, leading some to borrow money for living expenses and experience financial stress [7]. The most prevalent motive for seeking employment was the need to earn money, followed by the necessity to cover essential living expenditures [8]. Employers also valued learning activities, such as apprenticeships and work experience, which had become selection criteria [9]. Many students believed that having work experience on their resume before graduation was necessary and could improve their future prospects [10, 11]. When asked about personal development tools, 66% of students claimed that part-time jobs taught them something, while 48% attributed their learning to college lectures, professional courses, other subjects, and lecturers [12].

This research specifically investigates the relationship between working part-time during college and three main factors: well-being, academic self-efficacy, and satisfaction with their chosen academic major. We explore how these factors might influence each other and how part-time job plays a role in this dynamic. By understanding these connections, we aim to develop insights that can support students in making informed decisions about balancing work and academics, ultimately promoting their overall well-being and success in college.

### *Part-time job and mental health*

Consistent surveys among students highlighted the beneficial effects of engaging in part-time work in terms of enhancing their organizational abilities and potential for future career development [8, 13]. The part-time job was also agreed to have numerous benefits by 82.1% of tertiary students, with the most significant advantage being the ability to self-finance during university, the opportunity to gain work experience, improvement of time, and financial management [3, 6, 14]. Along with the positive effects of a part-time job, different studies, however, have shown negative

effects of a part-time job on students, especially on mental health - a significant element that governs and crucially impacts human activities, motivations, and enjoyment. As a result, students who took up part-time jobs claimed that their stress and exhaustion levels increased as their mental health declined [8, 15-22]. Financial stress was an unavoidable pressure for low-income students [18] and having low-income family support or lack of social allowance also led students to pick up a part-time job. Additionally, the rising costs of university education resulted in an increase in working hours/shifts for students; in other words, they were compelled or more willing to have longer shifts so as to cover the cost of living and education [23, 24].

As mentioned previously, students working part-time tended to have higher stress and distress levels than those who did not [23, 25] to which rest deprivation was one of the most significant impacts [6]. Additionally, extended stress and burnout caused by part-time jobs could detrimentally affect students' learning experience outcomes and reduce their sense of well-being [17,24,26,27]. On top of that, experiencing emotional exhaustion and deterioration could have made students more cynical about the value of attending university and led them to consider dropping out [20,28]. However, once their mental health was "healed" or improved to a certain extent, the students themselves could have significantly minimized or actively deprived/avoided the detrimental consequences on academic performance [26]. Hence, this is a potentially significant finding since it suggests a means to mitigate the negative impacts of part-time job stress on student learning. Yet, other opposite studies found no correlation between stress and part-time job [29] when the level of stress associated with the part-time job was reported to be extremely low, accounting for only .8 % [30], and there were no differences in perceiving happiness or burnout between working and non-working students [31]. Another intriguing discovery was made in the association between shift duration and students' mental health: the longer their shift or the more frequently they work, the bigger the impact on their sleep quality, fulfillment, and happiness [8,25,32,33]. While one study found that part-time jobs did not affect students' sleep-wake cycles [34], it was still demonstrated that lack of sleep would impact university students' learning.

In Vietnam, a significant percentage of students reported to have massive declination[s] in their mental health [35-37]. For example, a high percentage of students from Ho Chi Minh City University of Food Industry reported feeling exhausted and stressed due to their part-time jobs (64.9%). Working at high speed or in a stressful environment with unavoidable, unhealthy, repetitive behaviors could have greatly affected students' health: staying up late and eating at the wrong time – which consequently led to exhaustion, depression, and other severe disorders [37]. Students' health conditions could have been directly affected, making their academic results worse than those who did not work [36,37]. However, when taking contradictory views on this current issue, the number of students experiencing stress from part-time jobs accounted for only a small percentage (24%) in the 2016 survey [35]. Another study found no significant correlation between depression and part-time jobs among a cohort of students from Tra Vinh University in Vietnam [31,38]. Although a part-time job makes it impossible for students to spend more time studying, its effect size seems to differ between students' job characteristics: indoor or outdoor, manual or intellectual work, and lower or higher positions.

#### ***Part-time job and academic self-efficacy***

Self-efficacy is a person's confidence in the ability to carry out tasks and achieve goals [39]. Bandura's social cognitive theory suggested that self-efficacy is an essential factor. It reflects an individual's perception of external social factors [40]. Evidence showed that students with higher self-efficacy were more likely to endeavor and persevere when faced with challenging tasks. In contrast, students with low self-efficacy sought more straightforward assignments to avoid failure [41].

Numerous studies indicated that part-time jobs played a potential role in effective learning ability and self-confidence among college students [42]. Students may have experienced positive, negative, or both impacts on their learning ability through part-time jobs. However, self-efficacy in learning was considered an essential variable in coping with stress among students [43]. Additionally, students with better mental health tended to have higher academic performance [44,

45]. Academic self-efficacy is crucial for success in higher education. Higher levels of self-efficacy were related to lower levels of stress and better academic outcomes. Part-time jobs were directly related to students' career goals and could increase confidence and satisfaction with their major [33, 34, 46]. However, if the part-time job was unrelated to their career goals, it could have caused stress and impacted academic performance [47,48].

To accurately assess the impact of part-time job on different aspects of a student's life, it's crucial to consider an "employment profile" that encompasses not only reasons for working and total hours but also the number of jobs held [49]. With regard to student who have financial burdens, they tend to work more than one job [50]. However, a limited body of research examines the influence of the number of jobs students hold on several aspects, such as their mental health and academic self-efficacy. The influence of parental financial support on student employment also varies across cultures. In contrast to Western societies, where student jobs are often seen as a path to independence, Asian parents may provide more conditional economic support to their children [6]. Higher parental income can create a more favorable environment for students to focus on their studies. With a strong financial foundation, students can pursue specialized knowledge without facing the same level of economic pressure. In addition, according to the threshold model, the number of hours worked was a determining factor in student achievement. Exceeding the threshold had a negative impact on learning while staying below the threshold could have positive effects, such as improving students' grades [13,35,36]. Students working more than 15 hours per week had poorer health and academic performance compared to those who worked less or not at all. Moreover, those who worked late or did not rest on weekends were more likely to experience disrupted sleep, leading to health issues and decreased academic performance [13]. Fatigue and lack of sleep made students less focused during class [7,51], and dedicating a significant amount of time to work reduced their available study time. Overloaded students with time management and responsibility also reported increased stress when balancing their academic workload and part-time job [11,52].

#### ***Part-time job and academic major satisfaction***

In recent years, the rate of university students dropping out of school or changing majors has also become a prominent issue worthy of attention [2,53,54]. Many studies were conducted to find out the negative and positive causes leading to this problem and obtain objective reports. According to a 2020 study, students changed majors not because they felt dissatisfied with their current major but because of what motivated them in the new major: interest in the subject, career, and job opportunities, and a higher level of compensation [53,55]. Hovdhaugen and Aamodt's study in 2009, with 326 dropout students, also showed that "Inadequate tutoring" significantly contributed to students' decision to drop out. In addition, "Was employed," "Lagged behind in study progression," and "Studies did not interest me anymore" were the common reasons [56,57].

Although part-time jobs have negative effects on students' learning, in the above studies, it is not seen in the list of main factors that lead to students' decision to drop out or discontinue their current major. While students understood that part-time employment helped them improve personal skills, there was a dearth of understanding about how part-time work might give distinctiveness in the graduate job market and assist long-term graduate careers [58]: 62% of students dropped out of school because of their job during the semester [17]. As mentioned in the relationship between part-time jobs and student mental health above, students who experienced high levels of conflict between part-time jobs and studying report higher levels of burnout and lower levels of satisfaction with university life. The emotional fatigue caused by part-time jobs had a significant effect on academic performance and students' perceptions of attending university and the purpose of that [28]. While part-time jobs may have provided financial benefits for students [59], students who worked many hours or performed non-degree-related jobs were more likely to have experienced stress, fatigue, and exhaustion, and subsequently put their success and happiness in their studies at risk [60]. For university students working 20 to 29 hours per week, the dropout rate was about 160% higher than those who did not work. For those working more than 30 hours per week, this number ranged between 200 and 204% [61]. Other survey results also directly showed that working more than 20

hours per week negatively affected completing the study program and increased the risk of dropping out of school in tertiary students [62, 63].

The positive benefits for students' future studies and careers are worth recognizing. Students who were not working part-time had a higher graduation rate, but in return, students participating in part-time jobs could better orient their studies and clarify their career goals [63]. The study by Evans and Yusof [13] found that part-time jobs benefited students' future careers and emphasized the need for part-time work for university students to develop critical skills to assist their graduate job applications. Students could also gain work experience, including experience related to the field or job they wished to pursue. In addition, term employment could provide students access to different forms of cultural capital, which could improve students' career opportunities. Many students continued to work part-time after graduation because they loved it or could see the potential to advance in this field [55,64,65].

Up to now, the impact of part-time jobs on Vietnamese students' likelihood of changing/leaving their majors has yet to be thoroughly studied and interpreted much. Thus, this is also a remarkable gap for us to conduct the current research.

#### ***Research Hypothesis***

- Hypothesis 1: Mental health would influence academic major satisfaction.
- Hypothesis 2: Mental health would influence academic self-efficacy.
- Hypothesis 3: The number of part-time jobs would moderate the relationship between mental health and academic self-efficacy.
- Hypothesis 4: Academic self-efficacy would influence academic major satisfaction.
- Hypothesis 5: Academic self-efficacy would mediate the relationship between mental health and academic major satisfaction.

#### ***Significance and advantage of our work***

The impact of part-time jobs on students can vary depending on each country's cultural, educational, and policy contexts. It is interesting to examine how students perceive and engage in part-time employment and explore the potential effects on their academic success, mental health, and career aspirations. This study aims to investigate the relationships between academic self-efficacy, mental health, and academic major satisfaction among part-time job students. By delving into these aspects, we aim to better understand how part-time work experiences may influence various dimensions of students' lives and well-being in the educational context.

## **METHODS**

### ***Study procedure and data collection***

For the target audience who were students studying at universities in Vietnam, the research team collected data in two parallel forms: an online survey via Google form and a survey at universities in Ho Chi Minh City, Vietnam (e.g., Ton Duc Thang University, Ho Chi Minh City University of Technology and Education, Ho Chi Minh City University of Technology (HUTECH), Ha Tinh University, and more). The convenience sampling method was used for the study's data collection, which took place from March 24 to May 9, 2022. During the survey, the research team explained and ensured that the anonymity conditions for the subjects were met and that their consent was obtained. Survey participants were utterly voluntary with no remuneration and had the right to stop the survey even while the research was in progress for any reason. The survey took about 10-15 minutes to complete. Participants were encouraged to contact the research team via email or phone if they had any questions during the survey.

In this cross-sectional study, items from three scales were translated both forward and backward. A native Vietnamese speaker who is also fluent in English translated the English version into Vietnamese for the initial translation. Subsequently, an English-native, Vietnamese-fluent experienced translator reverse-translated the Vietnamese version into English. The research team then assessed the accuracy of the text and any differences between the original and the two translated versions (the English-translated and the Vietnamese back-translated versions).

The sample size for our study was determined based on recommendations from 100 to 200 observations, which was considered a good starting point for path estimate analysis research [66]. The convenience sampling method was employed, involving 750 participants as the initial sample size. Subsequently, data was screened and cleaned following Osborne [67] suggested guidelines. Outliers and questionable response patterns that did not satisfy the set criteria had to be identified and removed (e.g., missing data, etc.). When compared to the reversed item, the detection of questionable response patterns depended on whether the offered responses could be classified as alignment marks, order markings, or inconsistencies. After this process, the final dataset comprised 603 valid samples in total.

The study sample included 321 (53.2%) students who were not engaged in part-time jobs and 282 (46.8%) had part-time jobs. For the aim of this study, we used 282 participants who had part-time jobs for our further analysis. This still met Kline [66] suggestion for observation variables. Of 282 participants, 190 (67.4%) were female students, and 92 (32.6%) were male students; 64 (22.7%) were freshmen, 105 (37.2%) were sophomores, 79 (28.0%) were juniors, 34 (12.1%) were seniors; 40 (14.2%) students had less than 14 credit hours, 116 (41.1%) had 14-20 credit hours, 93 (33.0%) had 21-25 credit hours, and 33 (11.7%) had more than 25 credit hours; 74 (26.2%) undergraduate students had parental income less than 6 million VND per month, 96 (34.0%) had parental income 6-10 million VND per month, and 112 (39.7%) had parental income more than 10 million VND per month. Table 1 shows the demographic information of all participants.

**Table 1.** Demographic characteristics.

	Total (n = 282)	MHC-SF		MSLQ-SE		AMSS	
	n (%)	M ± SD	p	M ± SD	p	M ± SD	p
<i>Gender<sup>a</sup></i>			.405		.995		.449
Female	190 (67.4)	3.15 ± 1.10		4.63 ± 1.25		2.68 ± .93	
Male	92 (32.6)	2.98 ± 1.13		4.59 ± 1.39		2.78 ± .90	
<i>Schoolyear<sup>b</sup></i>			.294		.867		.102
Freshmen	64 (22.7)	2.95 ± 1.20		4.53 ± 1.36		2.71 ± .90	
Sophomore	105 (37.2)	3.06 ± 1.09		4.68 ± 1.21		2.87 ± .86	
Junior	79 (28.0)	3.31 ± 1.12		4.58 ± 1.37		2.54 ± .99	
Senior	34 (12.1)	3.01 ± .98		4.72 ± 1.30		2.65 ± .93	
<i>Credit hours<sup>b</sup></i>			.825		.728		.943
< 14	40 (14.2)	3.06 ± 1.20		4.70 ± 1.40		2.80 ± .88	
14–20	116 (41.1)	3.05 ± 1.08		4.54 ± 1.24		2.66 ± .94	
21–25	93 (33.0)	3.17 ± 1.02		4.73 ± 1.17		2.74 ± .91	
> 25	33 (11.7)	3.08 ± 1.40		4.51 ± 1.71		2.73 ± .93	
<i>Parents income<sup>b</sup></i>			.131		< .05		.140
< 6 mil. VND	74 (26.2)	2.81 ± 1.44		4.22 ± 1.50		2.59 ± 1.02	
6–10 mil. VND	96 (34.0)	3.25 ± 1.06		4.83 ± 1.27		2.67 ± .78	
> 10 mil. VND	112 (39.7)	3.16 ± .86		4.71 ± 1.12		2.83 ± .94	

Note: a. Mann-Whitney test, b. Kruskal-Wallis test.

Abbreviations: MHC-SF, Mental Health Continuum – Short Form; MSLQ-SE, Motivated Strategies for Learning Questionnaire – Self-Efficacy; AMSS, Academic Major Satisfaction Scale.

### Study instruments

#### Mental Health Continuum – Short Form

The Mental Health Continuum – Short Form (MHC-SF) consisted of a 14-item questionnaire developed by Keyes focusing on well-being dimensions to assess individuals' happiness levels [70, 71]. The scale assessed emotional well-being and aspects of psychological and social functioning to

classify respondents' mental health as flourishing (high positive emotions, high positive functioning), languishing (low positive emotions, low positive functioning), or moderate (neither flourishing nor languishing). The measurement used a 6-point Likert scale from 0 (never) to 5 (every day).

MHC-SF measured the degree of (1) emotional well-being (items 1-3) as defined in terms of positive affect/satisfaction with life; (2) social well-being (items 4-8) as described in Keyes's model of social well-being (one item on each of the facets of social acceptance, social actualization, social contribution, social coherence, and social integration) [72]; and (3) psychological well-being (items 9-14) as described in Ryff's model (including one item on each of the dimensions of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance) [71, 73].

The outcomes of the Canadian population sample research analysis revealed that the three subscales, emotional well-being, social well-being, and psychological well-being, had good internal consistency [74]. The Cronbach's Alpha for the emotional well-being subscale was .82, the social well-being subscale was .77, and the psychological well-being subscale was .83, indicating that participants provided reliable and consistent replies. Furthermore, the overall scale was very reliable, with a Cronbach's alpha of .89. The Vietnamese version of the MHC-SF was validated for use in Vietnamese adolescents due to its construct validity; the internal consistency of the scale was found to be high, with a Cronbach's Alpha value of .88 [75].

#### *Motivated Strategies for Learning Questionnaire – Self-Efficacy*

The students responded to a self-report questionnaire (the Motivated Strategies for Learning Questionnaire – MSLQ) that included 56 items on student motivation, cognitive strategy use, metacognitive strategy use, and management of effort. Students were instructed to respond to the items on a 7-point Likert scale (1 = not at all true of me to 7 = very true of me) in terms of their behavior in school [76].

Analysis of motivational items revealed three distinct motivational factors: self-efficacy, intrinsic value, and test anxiety. In this study, the Self-Efficacy scale ( $\alpha = .89$ ), consisting of nine items related to cognitive ability and confidence in performing class exercises, was used to test the academic performance of students engaged in part-time work.

#### *Academic Major Satisfaction Scale*

A six-item measure of global satisfaction with one's major, the Academic Major Satisfaction Scale (AMSS), was developed and validated. Exploratory and confirmatory factor analyses suggested a unidimensional structure. AMSS scores were positively associated with career decision self-efficacy and negatively associated with career choice anxiety and generalized indecisiveness. Respondents rated their agreement with the items using a 5-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Items 1, 2, 3, and 6 were reverse-scored. Cronbach's Alpha for the six items was .94 [77].

#### *Data analysis*

The Excel program was used for coding, cleaning, and exporting data; and the Statistical Package for Social Sciences (SPSS) version 26.0 was used for data analysis. Descriptive statistics were used to describe participants' characteristics.

The present research was conducted using a quantitative approach that applied a cross-sectional study method with path analysis measured by partial least squares structural equation modeling (PLS-SEM). The PLS-SEM approach was selected to validate the hypotheses of the study and was used to analyze the effects of the independent variables on the dependent variables and examine the moderation and mediation hypotheses. Path coefficients, p-values, specific indirect, specific direct, and total effects were calculated using a comprehensive PLS-SEM analysis based on 5000 bootstrap samples.

The CFA suggested that the measurement was a nearly adequate fit in this investigation, with  $CMIN/df = 4.605$  ( $p < .001$ );  $GFI = .704$ ;  $CFI = .846$ ;  $TLI = .830$ ;  $RMSEA = .113$  and  $90\% CI [.107, .120]$  [78].

The normal distribution test revealed that the data for all three scales were not statistically significant, therefore, the non-parametric tests (Mann-Whitney and Kruskal-Wallis) were utilized for comparison. The Kruskal-Wallis test was used to examine any statistical differences between school years, credit hours, and parental income. The Mann-Whitney test was also used to test the existence of any statistical difference between genders.

**Ethical aspects**

The present study adhered to the Declaration of Helsinki [68] and followed the principles set forth by the American Psychological Association [69] regarding research on human participants. The study was approved by the Ethics Committee of the Department of Science and Technology - Ho Chi Minh City University of Education (under the Vietnamese MoET) with the number CS.2018.19.47.

**RESULTS**

**Measurement model (Outer model)**

The outer model was evaluated to determine measurement adequacy (Table 2). All measuring items had a variance inflation factor (VIF) of less than 1. The remaining outer loadings ranged between .623 and .940; all were significant ( $p < .001$ ). Four items in the AMSS scale (coded as AMSS1, AMSS2, AMSS3, AMSS6) with loadings less than .40 were deleted to improve reliabilities and validities; however, four items in the MHC-SF scale (coded as MHC\_SF\_S4, MHC\_SF\_S5, MHC\_SF\_S7, MHC\_SF\_S8) with loadings less than .70 were retained since their reliabilities were acceptable [79]. Cronbach's Alpha values for the three constructs ranged from .883 to .956, indicating good internal consistency. All constructs' average variance explained (AVE) was greater than .50, and the heterotrait-monotrait ratios (HTMT) (Table 3) were all less than .90. As a result, the model's discriminant validity was established as well [80].

**Table 2.** Mean, standard deviation, construct correlations, reliability, and validity.

	<i>M</i>	<i>SD</i>	<i>AVE</i>	<i>Cronbach's α</i>	<i>CR</i>
<i>MHC-SF</i>	3.10	1.12	.604	.956	.959
<i>MSLQ-SE</i>	4.62	1.30	.671	.948	.951
<i>AMSS</i>	2.72	.92	.795	.883	.891

*Abbreviations:* MHC-SF, Mental Health Continuum – Short Form; MSLQ-SE, Motivated Strategies for Learning Questionnaire – Self-Efficacy; AMSS, Academic Major Satisfaction Scale; *M*, Mean; *SD*, Standard Deviation; *AVE*, Average Variance Extracted; *CR*, Composite Reliability.

**Table 3.** Heterotrait-Monotrait (HTMT) ratios.

	<i>MHC-SF</i>	<i>MSLQ-SE</i>	<i>AMSS</i>
<i>MHC-SF</i>			
<i>MSLQ-SE</i>	.640		
<i>AMSS</i>	.383	.365	

*Abbreviations:* MHC-SF, Mental Health Continuum – Short Form; MSLQ-SE, Motivated Strategies for Learning Questionnaire – Self-Efficacy; AMSS, Academic Major Satisfaction Scale.

**Structural model (Inner model)**

The inner VIFs ranged between 1.003 and 1.713, demonstrating that multicollinearity was not an issue for this model. All hypothesized paths were found to be significant, and the results of the path coefficients are shown in Figure 1. Mental health positively predicted academic major satisfaction ( $\beta = .254, p < .01$ ) and highly increased academic self-efficacy ( $\beta = .648, p < .001$ ). Academic self-efficacy positively impacted academic major satisfaction ( $\beta = .206, p < .05$ ).

The path from mental health to academic self-efficacy had the largest effect size ( $f^2 = .737$ ), indicating a big-level effect. The path from academic self-efficacy to academic major satisfaction had the smallest effect size ( $f^2 = .030$ ), showing a minor level effect [81].



Considering the variation predicted in endogenous constructs, the R<sup>2</sup> ranged between 16.9% and 42.5%, showing a moderate to substantial level of predictive accuracy. The path coefficients are indicated in Table 4, and the outcomes of the hypotheses are presented in Table 5.

**Table 4.** Path coefficients.

	$\beta$	95% CI Lower	95% CI Upper	<i>p</i>
<i>Direct effects</i>				
<i>MHC-SF</i> → <i>AMSS</i>	.254	.075	.435	< .01
<i>MHC-SF</i> → <i>MSLQ-SE</i>	.648	.561	.728	< .001
<i>MSLQ-SE</i> → <i>AMSS</i>	.206	.007	.397	< .05
<i>No_PTJ</i> × <i>MHC-SF</i> → <i>MSLQ-SE</i>	.120	.035	.208	< .01
<i>Indirect effects</i>				
<i>MHC-SF</i> → <i>MSLQ-SE</i> → <i>AMSS</i>	.134	.004	.266	< .05

*Abbreviations:* *MHC-SF*, Mental Health Continuum – Short Form; *MSLQ-SE*, Motivated Strategies for Learning Questionnaire – Self-Efficacy; *AMSS*, Academic Major Satisfaction Scale; *No\_PTJ*, Number of Part-time Job.

**Table 5.** Results of SEM hypotheses.

<i>Hypotheses Proposed</i>	<i>Results</i>
H1: Mental health would influence academic major satisfaction.	Supported
H2: Mental health would influence academic self-efficacy.	Supported
H3: Number of part-time job would moderate relationship between mental health and academic self-efficacy.	Supported
H4: Academic self-efficacy would influence academic major satisfaction.	Supported
H5: Academic self-efficacy would mediate the relationship between mental health and academic major satisfaction.	Supported

**Mediation and moderation analysis**

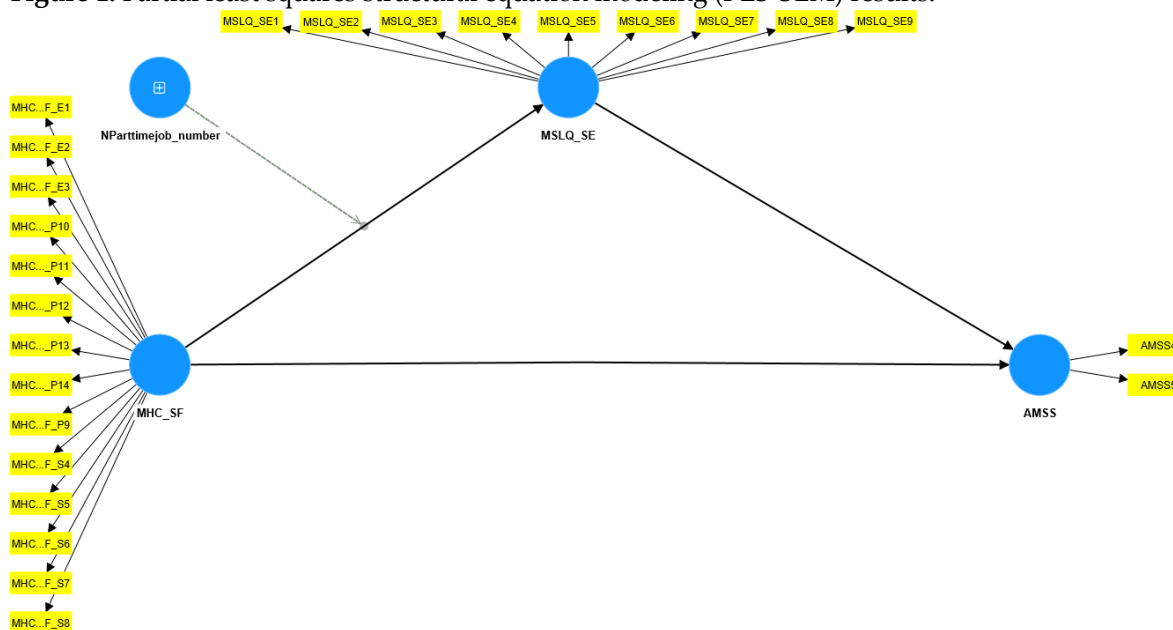
Hypothesis 5 is validated since the indirect effect of mental health on academic major satisfaction via academic self-efficacy ( $\beta = .134, p < .05$ ) is substantial. In addition, it was previously demonstrated that mental health has a beneficial direct effect on academic major satisfaction (see Table 4), confirming the complementing partial mediation role of academic self-efficacy.

The moderating impact of number of part-time job on the association between mental health and academic self-efficacy was computed and the result showed that the number of part-time job variable moderated the relationship between mental health and academic self-efficacy ( $\beta = .120, p < .01$ ).

**Comparison test**

There was no significant difference between gender ( $p > .10$ ), schoolyear ( $p > .10$ ), and number of credit hours ( $p > .50$ ) in three scales. However, there was a significant difference between students' parental income in *MSLQ-SE* scale ( $H_{(2)} = 7.197, p < .05$ ): students had parental income less than 6 mil. VND ( $M = 4.22, SD = 1.50$ ) had lower academic self-efficacy than others with parental income from 6–10 mil. VND ( $M = 4.83, SD = 1.27$ ), and parental income more than 10 mil. VND ( $M = 4.71, SD = 1.12$ ); and there was no significant difference in *MHC-SF* and *AMSS* ( $p > .10$ ).

**Figure 1.** Partial least squares structural equation modeling (PLS-SEM) results.



Note: MHC-SF, Mental Health Continuum – Short Form; MSLQ-SE, Motivated Strategies for Learning Questionnaire – Self-Efficacy; AMSS, Academic Major Satisfaction Scale; No\_PTJ, Number of Part-time Job.

## DISCUSSION

### General results discussion

Both academic self-efficacy and academic major satisfaction of students were found to be dependent on their mental health, with academic self-efficacy also indicating the level of their academic major satisfaction. In addition, mental health could influence academic major satisfaction through students' academic self-efficacy, and interestingly, the number of part-time jobs moderated the effect of mental health on students' academic self-efficacy.

The role of part-time employment in the lives of college students has long been a topic of interest in academic research. While there was evidence that part-time employment could provide financial support, practical work experience, and opportunities for skill development for students, the impact of part-time employment on students' mental health and academic-related issues was still being debated [62, 63, 82-84]. Our study's major objective was to investigate the relationship between mental health, academic satisfaction, academic performance, and the part-time job of university students in Vietnam. The relationship between three factors—mental health, academic satisfaction, and academic performance—was also examined in this study. The satisfaction and success of students (before and after graduation) were also measures of the institution's effectiveness [85]. This study represented a significant advance for future research on the consequences of part-time jobs on mental health, academic performance, and academic satisfaction of university students. Several implications, as well as theoretical and practical advances, were worth considering.

### Mental health and academic major satisfaction

Several recent studies focused on the positive relationship between part-time jobs and mental health [15, 86-88]. Our study investigated the relationship between mental health and academic major satisfaction among students who worked part-time while studying at university in Vietnam. Mental health refers to an individual's overall emotional and psychological well-being [45, 89], while academic satisfaction refers to the level of satisfaction or happiness that students felt with their learning experiences [44, 90]. The result showed that students' mental health positively influences their academic major satisfaction (hypothesis 1).

Part-time jobs could provide students with opportunities to build relationships with friends, colleagues, and mentors, which could contribute to a sense of connection and belonging with others [12,13]. Students working part-time had better time management skills and were more likely to

engage in social activities, promoting their mental well-being [11]. Although low income and financial stress were factors that might have caused students to drop out of college [46], the potential benefits of part-time jobs could have helped students address this difficulty to some extent. Participating in part-time jobs helped improve future employability and gave students a sense of financial security, reducing financial stress and the need for financial support from other sources [3, 14, 26]. Students who worked part-time to gain work experience or earn money to cover their study expenses were more satisfied with their academic performance than those who worked part-time for other reasons. This could be explained by their precise goals and awareness of the purpose of part-time jobs [91]. In addition, many studies showed that part-time students experienced less financial stress than those who did not work [59]. Reducing financial stress could have contributed to an overall sense of happiness for students and reduced the risk of mental health issues, leading to higher satisfaction with their university major. Economic and social factors were also noted to influence career decisions, and individuals who felt more confident in their ability to make career decisions were more likely to have higher career maturity [92,93]. Moreover, enhancing time management and teamwork skills through part-time job experience could contribute to improving students' employability [3,13]. Benckendorff and Blackman [94] argued that part-time jobs could help students better understand the practical applications of the theories they learned in class and develop more precise goals and career aspirations. Part-time jobs could become a source of additional knowledge and skills, as well as a motivation for students to learn [95] and had the potential to direct their learning and clarify their career goals better [63].

#### ***Mental health and academic self-efficacy***

College students who worked part-time might have experienced positive and negative impacts on their academic results and overall health, depending on factors such as job demands and stress levels [84]. However, consistent with the findings of other studies, the result indicated that university students' mental health positively influences their academic self-efficacy (hypothesis 2). Self-efficacy in one's abilities was an essential aspect of student success in higher education, as it reflected an individual's belief in their ability to complete academic tasks and achieve their goals [96-98]. A study by Lounsbury, Fisher, Levy, and Welsh [99] found that college students who participated in paid employment reported higher levels of self-efficacy in their abilities and career decisions related to higher-paying occupations than those who did not participate in such programs. These findings suggested that part-time jobs, particularly when they were directly related to students' career goals, could have had a positive impact on their confidence and satisfaction with their chosen major of study [99,100]. Conversely, jobs that were unrelated to their degree or career goals would have caused students to experience higher levels of stress and may have affected their academic performance [26,87]. Similarly, university students who worked part-time reported higher confidence levels in their academic abilities than those who did not work [86]. If their part-time job was related to their academic major, they also showed higher confidence levels than those who worked in an unrelated major [101].

A study by Zajacova, Lynch, and Espenshade [102] actively investigated the relationship between self-efficacy, stress, and academic success among college students and found that higher levels of self-efficacy were associated with lower levels of stress and better academic performance. In addition, students with high self-efficacy were more likely to have engaged in positive coping strategies to manage stress [102]. Additionally, regardless of the number of working hours, an increase in psychological well-being would have reduced the likelihood of negative impacts on academic performance [26]. On the other hand, students with less mental health might have experienced negative effects of part-time jobs, such as increased stress and reduced time for self-care and studying, which may have decreased their confidence. Thus, higher levels of psychological well-being would have also promoted more elevated levels of self-efficacy, indicating that mental health might have played a role in the relationship between part-time job and self-efficacy [86].

Considering the benefits of a part-time job can provide more persuasive explanations for why part-time students have better mental health, which promotes their ability to learn. In Broadbridge

and Swanson's study, although part-time job students were found to have a lower sense of belonging and less connection to the university community than non-working students, achieving high job satisfaction and good time management skills could have led to positive outcomes such as enhancing personal capability, motivation, and achievements [55]. Part-time jobs could have been a valuable experience because they provided many practical benefits to both the learning process and students' future careers, such as accumulating work experience and developing transferable skills, time management skills, and balancing work and study responsibilities [55,64].

#### ***Academic self-efficacy and academic major satisfaction***

Academic self-efficacy and academic major satisfaction are significant determinants of academic achievement and general happiness. Therefore, cultivating academic self-efficacy and selecting a major corresponding to their strengths and interests could enhance individuals' chances of achieving academic success and being satisfied with their academic experience, as stated by Kim, Kim and Lee [103]. The study's result shows that students' academic self-efficacy positively influences their academic major satisfaction (hypothesis 4). Students with high academic self-efficacy were more confident in their ability to study and succeed academically, resulting in a more optimistic view of their academic major. If they chose a major that matched their strengths and interests, they might have been more motivated to succeed in their chosen field of study, which could have boosted their satisfaction with their academic major [104]. Komarraju, Swanson, and Nadler [105] found that academic self-efficacy was positively correlated with academic major satisfaction and could predict academic major satisfaction. Some research findings indicated that academic self-efficacy and study meaningfulness positively predicted student satisfaction [106], which may have affected academic achievement. Academic major satisfaction was found to partially mediate the relationship between academic self-efficacy and academic achievement [103]. However, Yang found that academic self-efficacy in the regression model did not actually explain academic major satisfaction [107]. Therefore, future research may investigate the factors influencing the relationship between academic self-efficacy and academic major satisfaction.

#### ***Academic self-efficacy mediates mental health on academic major satisfaction***

In addition, the findings revealed that academic self-efficacy served as the relationship's mediator in the connection between mental health and academic satisfaction (hypothesis 5). As mentioned before, a student's mental health could be used as a predictor of their academic self-efficacy and academic major satisfaction; the better a student's mental health, the greater the student's academic self-efficacy and academic major satisfaction would be. Also, students who had good mental health would have had confidence in themselves while learning, which would have led to satisfaction with their chosen field of study.

#### ***Number of part-time job moderates mental health on academic self-efficacy***

Part-time jobs have a moderating effect on the relationship between mental health and academic self-efficacy (hypothesis 3). The influence of mental health on academic self-efficacy is marginally modified by the number of part-time jobs held by students. Brown and Lent [86] found that students with better mental health had higher levels of self-efficacy, suggesting that part-time jobs might have further enhanced their confidence. Additionally, part-time jobs could have provided students with a sense of purpose and direction, as well as opportunities to develop important skills and gain practical experience. Good organization and time management skills would have helped students to balance their study and work responsibilities better [108]. The benefits of part-time jobs would have also extended to social relationships, as they would have supported students in connecting with people and increasing social interaction frequency, providing real-life experiences that promote mental health and enhance learning ability [13]. Balancing needs in different areas of life is essential for overall psychological health. Individuals who reported satisfaction with balancing needs in various areas of life were found to have higher levels of happiness and lower levels of distress [109]. This would have also been suitable for students who participated in part-time jobs, promoting an overall sense of happiness, which might have influenced their academic major satisfaction [16, 110]. According to the Self-Determination Theory, individuals with high levels of autonomy, competence,

and relatedness were more likely to achieve positive outcomes, including greater happiness and motivation [111,112]. Moreover, Lee [16] found that university students who worked part-time while studying reported higher levels of self-esteem and perceived control over their lives than those who did not work.

#### ***Group differences result discussion***

Men and women reported similar levels of stress in most parts of life; however, women reported higher levels of stress linked with mental health concerns [113]. Firstly, the findings of this study indicated that there were no significant gender disparities among students with part-time mental health jobs. This is similar to the research undertaken by Carney, McNeish, and McColl [26]. Some studies indicated that women experienced greater workplace stress than men [114]. Secondly, research results showed no statistically significant differences between male and female students in terms of academic performance and academic motivation. It is unknown whether gender influences the academic performance of part-time students. According to Castagnetti and Rosti [115], if academic competition was fair and individual talent was evenly distributed by gender, the gender gap in degree scores was due to female students' greater endogenous individual effort. Thirdly, according to the results, there was no significant difference between male and female students' satisfaction levels with their chosen majors. Additional variables are likely required to determine the relationship between part-time workers and academic satisfaction.

Based on the current study associating working college students with their mental health, there was no significant distinction between credit hours. This depends on the field of study, the institution, and the amount of effort invested in the subject. Additional research implied that the negative correlation between depression and GPA is not attributable to less time spent on schoolwork but rather to the productivity of that time [116]. In the meantime, music education students chose to increase their workload, and more credit hours [including obligatory courses with no credit] were related to elevated anxiety and stress levels [117]. In addition, this study found no significant differences in the effect of credit hours on academic performance for students with part-time jobs. While there was less evidence that the number of credit hours influenced academic performance for part-time students, studies indicated that higher work intensity led to fewer credits completed each term by full-time students, especially at four-year colleges [12]. Students' inability to manage studies and part-time employment is a problem that must be addressed. The number of overtime hours needs to be explicitly regulated, particularly in Vietnam. The reflection that the average full-time college student's effective study hours decreased by one-third (from 40 to 27 hours) per week between 1961 and 2003 in the United States [118]. Besides, according to statistical results, the number of credit hours a student took did not significantly affect their academic satisfaction. If a student is interested in their job future, they are confident that they are on the correct route to career success. These students should exhibit high levels of contentment with their academic studies and professional decisions.

Even a decade ago, students' social and economic backgrounds in the twenty-first century were drastically different [55]. Many students now work not only to cover their expenditures but also to obtain valuable professional experience. Nevertheless, factors such as insufficient parental contribution, limited personal income, and debt significantly impact a student's decision to work while attending school [49]. The study revealed no difference in mental health, academic satisfaction, and parental income for students with part-time jobs. This needs to be explored further in future studies. It is evident from the data that there is a disparity between parental income and the academic achievement of part-time working students. Students whose parents indicated a monthly income of less than 6 million VN (about 250 USD) had a poorer academic performance than those whose parents reported a better income. Because income generation is a priority for these working students, they have less level of academic self-efficacy than non-working students. Negatively, Lindsay and Paton-Saltzberg [119] discovered that the majority of their sample worked during the academic year and concluded that students who worked part-time earned lower grades than those who did not. Furthermore, part-time working students were more likely to miss class [27].

#### ***Implications***

To our knowledge, this is the first study to examine the impact of part-time employment on students on all three facets of mental health, academic satisfaction, and academic performance. Similarly, there has yet to be a detailed study on the degree of the impact of part-time jobs on all three criteria of mental health, academic performance, and student satisfaction simultaneously. Although the extent of the effect of part-time employment on mental health, academic satisfaction, and academic self-efficacy has not been thoroughly investigated in this study, its findings on the impact and advantages of mental health on academic satisfaction and academic self-efficacy of students with part-time jobs will be used by educational institutions and schools to measure the efficacy of study programs. Our findings add to the body of knowledge and help people understand the beneficial effects of mental health on academic achievement and satisfaction for part-time students. This gives students more perspective when deciding whether or not to work part-time to protect their mental health and academic performance.

Moreover, the study's results suggest that part-time jobs can have a positive impact on the academic abilities of university students, especially when they are in good mental health. However, it is also important to recognize the importance of addressing the stressors in promoting the happiness and success of students [120] and balancing academic and work commitments to promote happiness and success in learning [26]. Broadbridge and Swanson [55] emphasized the significance of figuring out how to maximize both employment and study in order to benefit students, businesses, and institutions to the fullest extent possible [55]. More manageable part-time employment options could allow additional students who might not otherwise be able to afford it to consider higher education [121,122]. These results also demonstrate the interest of psychologists and educational institutions in the effects of part-time employment on their students [123-128]. This is one of the factors that helps them improve the quality of training support, create conditions for students to pursue their majors in the best way, and increase their ability to attract students to consider choosing a higher education institution.

Therefore, research efforts aim to create conditions for students to work part-time while ensuring academic programs and improving access to knowledge for those who need help to afford study fees or whose tuition fees are too high. As such, the need for support services and policies to ensure students can effectively manage their work and studies is also emphasized [55]. Overall, the study highlights the importance of balancing work and academic commitments and promoting good mental health for academic success while also recognizing the potential benefits of part-time employment in enhancing academic achievement and satisfaction [129-132].

#### **Limitations**

When assessing the results, it is crucial to consider the study's limitations. Firstly, this cross-sectional study could not demonstrate the long-term impacts of part-time jobs on university students' academic performance, mental health, and academic satisfaction. Secondly, the survey only included part-time employed university students, so future research should design longitudinal studies to understand further how part-time jobs influence these factors and to expand the research audience for more intriguing results. Additionally, the obtained data was self-reported, which may have biased the reporting. Furthermore, variables 1, 2, and 3 were eliminated from the scale due to the reliability and validity of the CFA model, so this scale can only utilize the two variables AMSS4 and AMSS5 because of translation. As a result, the next study should reevaluate how to translate the scale to be more appropriate for Vietnamese. Lastly, to better understand the specific factors that might influence people's opinions about part-time jobs, future researchers should conduct in-depth interviews to gather more information about the effects and role of part-time jobs on mental health, academic satisfaction, and academic performance. It is important to note that the comparison ratio should also be considered in future studies to provide the best results, as the current ratio is still substantially different, surpassing 1.5 times.

#### **CONCLUSIONS**

This study aimed to examine the connection between mental health, academic self-efficacy, and academic major satisfaction. Some significant findings from the study contribute to the scientific

knowledge of these topics. Firstly, the results suggested that mental health is positively associated with academic major satisfaction. This shows that students who have good mental health are more likely to be satisfied with their chosen academic major. Secondly, the study indicated that mental health also boosts students' academic self-efficacy. This finding underscores the significance of mental health in fostering academic confidence in students. Lastly, the study indicated that academic self-efficacy is a significant predictor of academic major satisfaction. This implies that students who possess higher levels of academic self-efficacy are more likely to be satisfied with their academic major. The study found that academic self-efficacy functions as a mediator between mental health and academic major satisfaction. This shows that students who have good mental health are more likely to have high levels of academic self-efficacy, which in turn leads to better satisfaction with their academic major. Moreover, the study also discovered a potential influencing element on academic self-efficacy - parental income. The comparison results showed a significant difference in academic self-efficacy among students whose parents had lower incomes. This highlights the importance of considering socioeconomic factors when conducting research on academic self-efficacy. On the basis of these findings, it is suggested that schools and other relevant organizations pay particular attention to the mental health of students in order to enhance academic self-efficacy and create satisfaction with their chosen profession. Also, future studies should take into account the potential influence of parental wealth on academic self-efficacy when examining this subject. By building on this research, we can gain a deeper understanding of the complex relationship between mental health, academic self-efficacy, and academic major satisfaction; and develop strategies to promote student success in higher education.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of the Department of Science and Technology - Ho Chi Minh City University of Education (under the Vietnamese MoET) with the number CS.2018.19.47.

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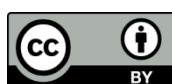
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